

A NEW SPIDER MITE ON CITRUS IN SOUTHERN CALIFORNIA
(Acarina: Tetranychidae).

By E. A. MCGREGOR¹, *Whittier, California.*

The description of this new species of *Tetranychus* is based upon material which was collected on navel orange fruits, and subsequently reared on lemon leaves.

Tetranychus lewisi, new species.

Female.—Averaging 0.36 mm. in length, and 0.17 mm. in width. Twenty-four strictly dorsal setae, not arising from tubercles; in addition, visible from above, are a pair of similar setae on the lateral margin of body opposite coxae III, and an inconspicuous pair of setae at posterior tip of abdomen. Body oval from above; at first a pale greenish-amber color, but deepening in age to amber; a varying number of blackish spots along lateral margin, but usually one over each 3rd coxa and a pair near hind tip of body. One perfect eye cornea on each side. The dorsal integument between the lumbal and sacral setae with transverse striations (as in *T. pacificus* McG.). Mandibular plate rounded anteriorly. "Thumb" of palpus fully one-fifth shorter than its greatest thickness; bearing terminally a "finger" with subparallel sides and rounded tip, when viewed laterally; terminal "finger" less than half as thick as "thumb" at tip; the dorsal sensilla spindle-shaped, about as long as terminal "finger"; "thumb" bearing five additional setae placed and proportioned about as usual. Relative lengths of the joints of the foreleg as follows: Coxa, 15; trochanter, 10; femur, 28; patella, 14; tibia, 17; tarsus, 24. Tip of tarsus (female) bearing a claw which is bent strongly downward, and is cleft into three pairs of needle-like spurs, the proximal pair the strongest basally. Tarsus of leg I with two sets of duplex setae dorsally. The usual four tenent hairs arising from the onychium, a pair on each side of the claw base. The collar trachea extends downward and backward as a slightly expanding tube, then abruptly bend upward at a right angle to form a somewhat swollen chamber which is about one-third as long as the main arm. Egg almost spherical, with a very slender axial stalk; at first almost colorless, but becoming straw-color before hatching; 0.12 mm. in diameter.

Male.—Body smaller, narrower, and more wedge-shaped than that of female; mustard-yellow color; legs proportionately longer. Penis with inner lobe rod-like; basilar lobe inconspicuous; shaft three times as long as its basal thickness, inner half concave above, bent downward about 45° from its main axis, then again bent slightly upward; portion of penis distad of the shaft gradually acuminate to a sharp tip. Tarsal claw of foreleg is fundamentally similar to that of female, but is less strongly bent, and the divisions are very closely appressed, and appear under the low magnification almost as a simple claw. "Thumb" of palpus more cone-shaped than in female; the terminal "finger" reduced to a nipple-like papilla.

¹ Retired April 8, 1943, from the Bureau of Entomology & Plant Quarantine, U. S. Department of Agriculture.

Type slide.—U. S. National Museum No. 1431.

The type material is from Corona, Calif., from fruits of navel orange, collected by H. C. Lewis. It has also been collected from lemon fruits at Whittier, Calif., by F. Munger and H. R. Yust.

Of American mites, this species perhaps is allied with *Tetranychus oregonensis* McG., *T. willamettei* McG., *T. yumensis* McG. and *T. sexmaculatus* Riley. Of the European mites, it is perhaps closest to (*Tetranychus*) *Eotetranychus carpini* (Oud.)

In the pattern of the dorsal cuticular striations, and in the general structure of the penis, the present species is referable to the genus *Eotetranychus* Oud. which includes several European species. American workers have not accepted this genus, but subsequent study may result in transferring to it several existing American species of *Tetranychus*.

BIOLOGICAL NOTES.

Females of *Tetranychus lewisi*, n. sp., were transferred from navel oranges to tender lemon leaves in Mungar cages, and kept at room temperatures varying from 62° to 73° F. The mites seemed to thrive under these conditions.

Females commenced ovipositing less than 24 hours after issuance. During the period of rearing, females deposited an average of five eggs per day. The average duration of the stages in developing females were as follows: Incubation, 6 days; larval stage, 2 days; 1st stage nymph, 2 days; 2d stage nymph, 2 days. The time required from egg deposition to the emergence of the female was 12 days. The development of male individuals required one or two days less, due to the omission of one nymphal instar.

The mites form a loose canopy of webbing under which they live. All stages are capable of spinning these fibrils. In feeding, either on the fruit or the leaf, pigment is extracted which results in a stippling of the rind and epidermis with paler spots.

EXPLANATION OF PLATE 13.

Tetranychus lewisi.

- Fig. 1. Tip of tarsus of leg I of female.
- Fig. 2. Terminal portion of palpus of male, viewed laterally.
- Fig. 3. Terminal portion of palpus of female, viewed laterally.
- Fig. 4. Tip of tarsus of leg I of male.
- Fig. 5. Lateral view of penjs.
- Fig. 6. Mandibular plate.
- Fig. 7. Leg I of female, viewed from outside.
- Fig. 8. Collar trachea, viewed laterally.

